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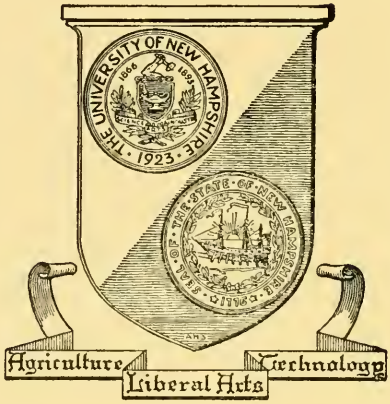

The University
of
New Hampshire

INSPECTION OF COMMERCIAL FERTILIZERS

MADE FOR THE STATE DEPARTMENT OF AGRICULTUURE

The inspection of commercial fertilizers reported in this bulletin was made under the direction of the Honorable Andrew L. Felker, Commissioner of Agriculture. Mr. Eugene D. Sanborn, State Inspector, collected 113 samples of fertilizer materials which had been delivered to consumers or were offered for sale by dealers between March and June, 1925. The general character of the fertilizer materials collected is shown by the following classification:

Complete Fertilizer	87
Acid Phosphate	4
Sulphate of Ammonia	1
Nitrate of Soda	1
Muriate of Potash	2
Sulphate of Potash	1
Ground Bone	5
Tankage	4
Tankage and Bone	1
Dried Blood	1
Poultry Manure	1
Sheep Manure	5
	113

THE FERTILIZER LAW.

Forty of the forty-eight states in the United States have a law regulating the manufacture and sale of fertilizers. The general nature and purposes of the laws of the different states are similar. The New Hampshire Law entitled "An Act to Regulate the Sale of Fertilizers" was first passed in 1901 and last amended in 1917. The law applies to all

fertilizer materials offered for sale whether complete fertilizers, or unmixed materials as nitrate of soda, acid phosphate, tankage, etc. Under the provisions of this law every manufacturer or dealer who shall sell or offer for sale any fertilizer material shall furnish with each lot or package a clearly printed statement certifying the number of net pounds, the brand name under which it is sold, the name and address of the manufacturer and a chemical analysis stating the minimum percentage of nitrogen, of water soluble potash, of total phosphoric acid and of available phosphoric acid. No person shall sell or offer for sale, any pulverized leather, hair or wool waste, peat, garbage tankage, or any inert material whatsoever, without an explicit printed certificate of the fact conspicuously fixed to every package of such material. The state official in charge of the administration of the fertilizer law is the Commissioner of Agriculture.

THE NEW ENGLAND STANDARD NINE.

Late in December, 1922, the directors of the New England Agricultural Experiment Stations and the agronomists of the New England State Colleges met in conference with representatives of the fertilizer manufacturers selling in New England and adopted nine grades of fertilizer which in their opinion meet all the fertilizer requirements of New England crops and soils.

The formulas and recommended uses of these nine grades, known as the New England Standard Nine, are as follows:

1. 0-12-6—For late fall seeding of grass and grain and for top dressing clover and alfalfa.
2. 2-12-4—For late summer and early fall seeding of grass or grain; also for corn with the addition of manure.
3. 3-10-4—For corn, small grains, millet, tomatoes and cabbage on the heavier soils.
4. 3-10-6—For corn, beans and peas on the lighter soils.

5. 4-8-4—For potatoes, beets, carrots, onions and other root crops on the heavier soils.

6. 4-8-6—For potatoes and other root crops on loams.

7. 5-4-5—For tobacco.

8. 5-8-7—For potatoes, celery and other truck crops on light soils.

9. 8-6-6—For top dressing hay and pasture land.

One object of this conference was to decrease the needlessly large number of different grades on the market. Had the recommendations made been accepted by the consumers of fertilizer materials in New Hampshire the 87 complete fertilizers analyzed in this year's inspection would have been comprised of 9 grades. Instead, there are 31 grades. This number might be reduced to 29 by omitting two grades, 8-16-8 and 10-16-14 which are double strength respectively of the grades 4-8-4 and 5-8-7. These 29 grades include only 6 of the New England Standard Nine. Three grades of the New England Standard Nine were not found offered for sale.

Not including the two double strength grades there were 7 grades representing 19 brands containing more potash than the agronomists of New England consider is necessary or profitable to use. No grade in the New England Standard Nine contains more than 7 per cent potash. Five grades, not including the two double strength grades, representing 17 brands, contain 10 per cent potash. In Table I are given the grades of complete fertilizers collected, the number of brands found in each grade, the average analysis of each grade and the average retail price per ton.

TABLE NUMBER I.

Formula.	No. of Brands.	Average per cent of nitrogen.	Average per cent of total phosphoric acid.	Average per cent of available phosphoric acid.	Average per cent of water soluble potash.	Average retail price per ton.
1—8—2	2	0.94	9.65	8.73	2.29	42.00
1—10—3	1	0.89	13.89	12.21	3.01	42.00
2—8—2	8	1.79	7.52	8.34	2.22	42.72
2—8—3	5	1.73	9.71	8.38	3.08	48.15
2—8—10	1	1.76	9.70	8.90	10.39	52.00
2—10—3	1	2.75	17.43	10.00	3.44	45.00
2—10—4	1	1.78	13.40	9.51	4.14	47.00
2—12—2	1	2.19	13.43	12.47	2.09	45.00
2—12—4	4	1.74	14.21	12.56	4.26	46.50
3—5—6	1	2.74	12.29	5.74	6.39	.....
3—8—4	6	2.57	9.73	8.52	4.21	47.67
3—8—10	4	2.64	10.45	8.28	10.31	54.00
3—9—2	1	2.58	10.21	9.18	2.04	.....
3—10—4	4	2.66	11.64	10.39	4.20	49.33
3—10—6	2	2.48	11.08	10.12	6.17	53.00
3—12—3	1	2.46	14.89	12.63	3.18	40.00
4—6—10	9	3.37	7.74	6.60	9.93	52.63
4—8—4	7	3.31	9.61	8.31	4.33	53.14
4—8—7	3	3.50	10.85	8.78	7.21	53.33
4—8—10	2	3.60	9.99	9.22	10.11	56.00
4—16—4	1	3.40	17.02	15.54	4.20	60.00
5—8—7	8	4.18	9.76	8.51	6.98	57.20
5—8—10	1	4.12	7.48	6.90	10.33	47.00
6—6—4	3	5.03	8.94	7.55	4.11	58.33
6—8—5	1	5.40	11.36	6.17	5.58	80.00
7—5—2	2	5.60	6.41	6.14	1.92	63.50
8—6—6	3	6.30	8.34	6.90	6.13	68.33
8—12—20	1	6.90	16.79	14.93	20.00	112.00
8—16—8	1	6.58	17.95	16.29	8.19	.....
10—3—8	1	7.57	9.26	3.30	8.00	.....
10—16—14	1	8.22	19.94	16.48	15.06	118.00

CALCULATION OF THE RELATIVE COMMERCIAL VALUE.

The price of commercial fertilizers varies as does that of potatoes, or any other commodity. When these flunctuations are controlled entirely by seasonal economic factors, the consumer may partially disregard them much in the same manner as he disregards fluctuations in the price of the sugar he buys. There are certain price differences, however, which he cannot afford to disregard. For example, there were eight different brands of fertilizer sold this year by eight different companies under the formula 5-8-7. The average price of the eight brands was $57.20 per ton. The lowest price was $45.40 per ton and the

highest $71.00 per ton. The consumer can only protect himself against such unjustifiable differences in price by figuring the commercial value of a fertilizer for himself before he agrees to purchase it.

A summary of the prices at which some of the different fertilizer materials were sold during the past year will illustrate how a comparison of the relative value of different grades may be computed.

Four brands of 16 per cent acid phosphate were offered at an average price of $27.75 per ton. One ton of 16 per cent acid phosphate contains 320 pounds of phosphoric acid. The cost per pound is $0.0867 and per unit $1.734.

The average cost of muriate of potash containing 50 per cent of water soluble potash was $52.50 per ton. One ton contains 1000 pounds of potash. The cost per pound is $0.0525 and per unit $1.05.

The cost of nitrate of soda containing 15 per cent nitrogen was $78.00 per ton. One ton contains 300 pounds of nitrogen. The cost per pound is $0.26 and per unit $5.20. The average cost of tankage was $56.33 per ton. It contained an average of 6.65 per cent nitrogen and 5.25 per cent available phosphoric acid. The value of 5.25 units of available phosphoric acid at $1.73 per unit is $9.08. The nitrogen cost $56.33 less $9.08 or $47.25 for 6.65 units. The cost per unit of nitrogen is $7.11 and per pound $0.355. Assuming the complete fertilizers contain equal amounts of organic and inorganic nitrogen the cost of nitrogen is the average of $0.26 for the inorganic form and $0.355 for the organic form or $0.307 per pound and $6.14 per unit.

Using the above values for nitrogen, phosphoric acid and potash in the unmixed materials the calculated value per ton of the different grades of mixed fertilizers as compared with the retail price per ton is shown in Table II. Only those grades are included on which two or more retail quotations were available.

TABLE NUMBER II.

Formula.	No. of brands.	Average retail price per ton.	Calculated value per ton.	Difference.
1—8—2	2	42.00	22.08	19.92
2—8—2	8	42.72	28.22	14.50
2—8—3	5	48.15	29.27	18.88
2—12—4	4	46.50	37.24	9.26
3—8—4	6	47.67	36.46	11.21
3—8—10	4	54.00	42.76	11.24
3—10—4	4	49.33	39.92	9.41
3—10—6	2	53.00	42.02	10.98
4—6—10	9	52.63	45.44	7.19
4—8—4	7	53.14	42.60	10.54
4—8—7	3	53.33	45.75	7.58
4—8—10	2	56.00	48.90	7.10
5—8—7	8	57.20	51.89	5.31
6—6—4	3	58.33	51.42	6.91
7—5—2	2	63.50	53.73	9.77
8—6—6	3	68.33	65.80	2.53

The calculated prices for nitrogen, phosphoric acid and potash in the unmixed materials used in computing Table II. are on the basis of the price of these materials delivered to the consumer in bags. Therefore, the column in the table headed, Difference, represents the relative amounts which the consumer pays for mixing and filler in the different grades. These differences show that it is economical for the consumer to purchase the medium and higher grades. The fact that the differences are not gradual suggests that some other factor is involved. This factor seems to be the unwarranted differences in price asked by different dealers for the same grade of fertilizer. For example, the figure in the Difference column for the grade 7-5-2 is $9.77 and is considerably higher than the other figures near it. This figure is the average of two brands. The one was offered for sale at $57.00 per ton and the other at $70.00 per ton. If $57.00 be substituted for the average figure of $63.50 in the column, Average retail price per ton, the figure in the Difference column would be $3.27. If $70.00 be substituted, the figure in the Difference column becomes $16.27. These figures further emphasize a fact previously mentioned in connection with the price differences in the 5-8-7 brands; namely, the consumer can only

protect himself against unwarranted differences in retail prices by figuring for himself the commercial value of a fertilizer before he agrees to purchase it.

NATURAL MANURES.

The statement is often made by consumers that commercial fertilizers are not so good as the natural manures. This statement may or may not be true, depending upon the grades of manures and the grades of commercial fertilizers that are being compared. When purchase is contemplated, no comparison between natural manures and commercial fertilizers is to be relied upon which does not take into consideration the relative price per ton or per pound of the available plant food materials. Within the past year several hundred tons of five different brands of sheep manure were shipped into the state and sold at an average price of $52.40 per ton. The average analysis of the five brands was nitrogen 2.17 per cent, available phosphoric acid 1.29 per cent and water soluble potash 2.39 per cent. Figuring the value of these sheep manures on the basis of the cost of nitrogen in equal parts nitrate of soda and tankage, of phosphoric acid in acid phosphate and of potash in muriate of potash the average value was $17.96 per ton. The cost to the consumer of the sheep manure sold in the state during the past year was about three times its commercial value.

NUMBER OF SAMPLES FOUND DEFICIENT.

Of the 113 samples analyzed 1 was found deficient by 0.2 per cent or more in all three elements, 4 were deficient in two elements and 13 in one element. A deficiency of 0.2 per cent of nitrogen amounts to about $1.25 per ton. The total number deficient was 16 per cent of the samples analyzed. This shows some improvement over 1924, when 21 per cent were deficient. In 1923 there were also 21 per cent deficient. In the tabulation of the analyses in the following pages deficiencies of 0.2 per cent or more are

shown in heavy black type. The names of the manufacturers are arranged alphabetically and under the manufacturer the different brands are arranged alphabetically or numerically by formula.

Assistance in the analytical work has been rendered by M. H. Voyagis and W. A. Westgate.

	NITROGEN		PHOSPHORIC ACID				POTASH	
			Total		Available			
	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found
AMERICAN AGRICULTURAL CHEMICAL CO. New York City.								
Aroostook Potato Manure	4.11	3.95	9.00	9.86	8.00	8.76	7.00	**6.75**
Bradley's Complete Manure for Potatoes and Vegetables	3.29	3.21	9.00	9.76	8.00	8.80	7.00	7.25
Bradley's Complete Manure with 10% Potash	3.29	3.29	7.00	8.19	6.00	7.18	10.00	10.00
Bradley's Corn Phosphate	1.65	1.65	9.00	9.18	8.00	8.00	2.00	2.16
Bradley's Eclipse Phosphate	0.82	1.01	9.00	9.44	8.00	8.40	2.00	2.30
Bradley's Northland Potato Grower	3.29	3.31	9.00	9.48	8.00	8.69	4.00	4.27
Bradley's Potato Fertilizer	1.65	1.65	9.00	9.45	8.00	8.19	3.00	3.09
Bradley's Potato Manure	2.47	2.54	9.00	10.06	8.00	9.02	4.00	4.23
Bradley's XL Super-Phosphate of Lime	2.47	2.57	11.00	11.83	10.00	10.53	4.00	4.31
Cereal Mixture	1.65	1.68	13.00	13.61	12.00	12.29	4.00	4.22
Corn Favorite	2.47	2.49	11.00	11.00	10.00	10.06	6.00	6.07
General Crop Fertilizer	1.65	1.90	9.00	9.70	8.00	8.43	3.00	3.08
Grass and Lawn Top Dressing	4.94	5.17	7.00	9.47	6.00	8.75	4.00	4.19
Hercules Top Dresser	6.58	6.61	7.00	7.90	6.00	6.22	6.00	6.16
High Grade Acid Phosphate	....	....	17.00	18.06	16.00	16.90	....	....
Lister's Corn and Potato Fertilizer	1.65	1.80	9.00	9.80	8.00	8.00	3.00	3.09
Monarch Potato Manure	3.29	3.48	9.00	9.20	8.00	8.34	4.00	4.42
Patapsco 3-9-2	2.47	2.58	10.00	10.21	9.00	9.18	2.00	2.04
Prolific 10% Potash Fertilizer	1.65	1.76	9.00	9.70	8.00	8.90	10.00	10.39
Special Ground Bone	2.06	3.50	22.88	23.96	....	....	....	....

Apothecaries Hall Co. **Waterbury, Conn.**								
Liberty Brand Fertilizer—All Crops	1.64	1.83	12.00	16.06	12.00	13.84	4.00	4.62
Liberty Brand Fertilizer, Fish, Bone and Potash	2.47	2.73	10.00	11.94	10.00	10.14	4.00	4.38
Armour Fertilizer Works. **Carteret, N. J.**								
Armour's 2-12-2 Fertilizer	1.65	2.19	12.50	13.43	12.00	12.47	2.00	2.09
Armour's 3-8-4 Fertilizer	2.47	2.62	8.50	9.56	8.00	8.10	4.00	4.35
Armour's 4-6-10	3.29	**3.04**	6.50	8.49	6.00	7.52	10.00	**7.84**
Armour's 4-16-4 Fertilizer	3.29	3.40	16.50	17.02	16.00	**15.54**	4.00	4.20
Armour's 5-8-7 Fertilizer	4.11	4.12	8.50	9.41	8.00	8.65	7.00	7.09
Armour's 8-6-6 Fertilizer	6.56	**5.62**	6.50	7.94	6.00	7.02	6.00	5.85
Armour's Corn Grower Fertilizer	1.65	1.83	8.50	9.31	8.00	8.06	2.00	2.30
Bone Meal	2.47	2.33	22.00	26.94	....	....	....	....
Ground Tankage	7.40	**6.64**	6.87	10.45	....	....	....	....
Sulphate of Ammonia	20.57	20.57	....	....	....	....	....	....
Bowker Fertilizer Co. **Boston, Mass.**								
Bowker's 16% Acid Phosphate	....	....	17.00	18.10	16.00	16.34	....	....
Bowker's All Round Fertilizer	2.47	2.54	9.00	9.46	8.00	8.34	4.00	4.40
Bowker's Corn, Grain and Grass Phosphate	1.65	1.65	9.00	9.91	8.00	9.09	2.00	2.12
Bowker's Hill and Drill Phosphate	2.47	2.72	11.00	11.34	10.00	10.46	4.00	4.07
Bowker's Market Garden Fertilizer	3.29	**3.06**	9.00	9.76	8.00	8.45	4.00	5.16
Bowker's New England Cereal Fertilizer	1.65	1.73	13.00	13.40	12.00	12.06	4.00	4.09
Bowker's New England Corn Fertilizer	2.47	2.47	11.00	11.16	10.00	10.18	6.00	6.26
Bowker's New England Top Dressing	6.58	6.66	7.00	9.19	6.00	7.46	6.00	6.38
Bowker's Potato and Vegetable Phosphate	1.65	1.65	9.00	9.86	8.00	8.62	3.00	3.05
Bowker's Sure Crop Phosphate	0.82	0.88	9.00	9.87	8.00	9.06	2.00	2.29
Stockbridge Early Crop Manure	4.11	4.18	9.00	9.88	8.00	9.22	7.00	7.13
Stockbridge Potato and Vegetable Manure	3.29	3.29	7.00	7.71	6.00	6.57	10.00	10.00
Stockbridge Top Dressing and Forcing Manure	4.94	5.07	7.00	8.48	6.00	6.60	4.00	4.14

	NITROGEN		PHOSPHORIC ACID				POTASH	
			Total		Available			
	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found
JOSEPH BRECK AND SONS, CORP. Boston, Mass.								
Ram's Head Brand Pulverized Sheep Manure	1.50	1.60	0.75	1.28	....	0.86	3.00	**2.65**
COE MORTIMER CO. New York City.								
E. Frank Coe's Columbian Corn and Potato Fertilizer	1.65	1.65	9.00	9.72	8.00	8.66	3.00	3.08
E. Frank Coe's Corn King	2.47	2.60	11.00	11.46	10.00	10.42	4.00	4.04
E. Frank Coe's Special Grass Top Dressing	4.94	4.85	7.00	8.88	6.00	7.30	4.00	4.00
E. Frank Coe's Standard Potato Fertilizer	3.29	3.29	7.00	7.14	6.00	6.18	10.00	10.00
CONSOLIDATED RENDERING CO. Boston, Mass.								
Acid Phosphate	....	....	17.00	19.24	16.00	17.87	....	....
Dried Blood	9.84	10.28	....	....	....	....	....	....
Ground Bone	2.05	2.18	26.00	30.23	....	....	....	....
Ground Bone	2.46	3.08	22.90	27.59	....	....	....	....
Ground Tankage	4.92	5.02	14.00	22.60	....	....	....	....
Muriate of Potash	....	....	....	....	....	....	50.00	50.36
Nitrate of Soda	15.22	15.51	....	....	....	....	....	....

JOHN C. DOW CO. Boston, Mass.								
Dow's Pure Ground Bone	2.00	2.59	24.00	27.25	10.00	**8.34**	....	....
EASTERN STATES FARMERS' EXCHANGE Springfield, Mass.								
Eastern States 3-12-3	2.46	2.46	12.00	14.89	12.00	12.63	3.00	3.18
Eastern States 4-8-10 Fertilizer	3.29	3.82	8.00	10.51	8.00	9.80	10.00	10.00
Eastern States 5-8-7	4.11	4.69	8.00	9.49	8.00	8.28	7.00	7.00
Ground Animal Tankage	8.23	9.17	4.58	9.39	....	3.23	....	....
Muriate of Potash	....	....	....	....	....	....	50.00	50.38
Sulphate of Potash	....	....	....	....	....	....	48.00	48.91
ESSEX FERTILIZER CO. Boston, Mass.								
Essex 2-8-2	1.64	1.64	9.00	**8.45**	8.00	**7.36**	2.00	2.19
Essex 3-8-10	2.46	2.65	9.00	10.12	8.00	8.63	10.00	10.54
Essex 4-6-10	3.28	3.55	7.00	8.09	6.00	6.69	10.00	10.01
Essex 5-8-7	4.10	4.32	9.00	9.66	8.00	8.20	7.00	7.18
Essex Fish Fertilizer 3-8-4	2.46	2.58	9.00	10.20	8.00	9.30	4.00	4.00
Essex Market Garden 4-8-4	3.29	3.30	9.00	9.79	8.00	8.23	4.00	4.26
Essex Potato Phosphate 4-8-7	3.29	3.38	9.00	9.47	8.00	8.63	7.00	7.21
Essex Top Dressing 7-5-2	5.76	**5.54**	6.00	**5.47**	5.00	5.22	2.00	**1.80**
INTERNATIONAL AGRICULTURAL CORP. Woburn, Mass.								
International Crop Grower	4.12	4.12	8.50	9.44	8.00	8.85	7.00	7.09
International Economy	1.60	1.60	8.50	9.60	8.00	8.60	2.00	2.40
International High Grade Manure	3.30	3.31	6.50	7.34	6.00	6.74	10.00	10.71
International Multiple Strength Fertilizer 8-12-20	6.58	6.90	13.00	16.79	12.00	14.93	20.00	20.00
International Multiple Strength Fertilizer 8-16-8	6.58	6.58	17.00	17.95	16.00	16.29	8.00	8.19
International Multiple Strength Fertilizer 10-16-14	8.22	8.22	16.50	19.94	16.00	16.48	14.00	15.06
International New England Special	1.60	1.73	12.50	13.76	12.00	12.06	4.00	4.12

	NITROGEN		PHOSPHORIC ACID				POTASH	
			Total		Available			
	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found
LOWELL FERTILIZER CO. Boston, Mass.								
Lowell 2-8-2 Bone Fertilizer	1.64	2.29	9.00	9.28	8.00	8.00	2.00	2.14
Lowell 3-8-4 Animal Brand	2.46	2.49	9.00	9.84	8.00	8.34	4.00	4.07
Lowell 3-8-10	2.46	2.58	9.00	10.65	8.00	8.79	10.00	10.00
Lowell 4-6-10	3.29	3.43	7.00	7.81	6.00	6.30	10.00	10.52
Lowell 4-8-4	3.29	3.44	9.00	9.48	8.00	8.00	4.00	4.06
Lowell 7-5-2	5.76	5.66	6.00	7.34	5.00	7.06	2.00	2.04
MCQUESTEN AND LEWIS Manchester, N. H.								
McQuesten and Lewis' 4-8-10	4.00	4.12	....	7.48	8.00	**6.90**	10.00	10.33
MANCHESTER RENDERING CO. Manchester, N. H.								
16% Acid Phosphate	....	....	17.00	18.64	16.00	16.36	....	....
Manchester Animal Brand 4 8-7	3.20	3.96	14.00	**12.62**	8.00	8.64	7.00	7.18
Manchester Special Fertilizer for all Crops	1.64	2.75	14.00	17.43	10.00	10.00	3.00	3.44
Tankage	5.75	5.75	....	16.83	8.00	**7.11**	....	....
Tankage and Bone	5.00	**4.25**	....	22.92	10.00	**7.74**	....	....

MERRIMACK FARMERS' EXCHANGE Concord, N. H.								
Merrimack 2-8-2	1.64	1.94	9.00	10.60	8.00	8.96	2.00	2.06
Merrimack 4-6-10	3.28	3.42	7.00	7.51	6.00	6.23	10.00	10.27
Merrimack 4-8-4	3.28	3.28	9.00	9.85	8.00	8.39	4.00	4.17
Merrimack 5-8-7	4.10	3.96	9.00	10.41	8.00	8.54	7.00	7.00
NATURAL GUANO CO. Aurora, Ill.								
Sheep's Head Pulverized Sheep Manure	2.25	2.18	1.25	2.25	1.00	1.76	2.00	2.22
NEW ENGLAND FERTILIZER CO. Boston, Mass.								
New England 3-8-10	2.46	2.59	9.00	9.80	8.00	8.43	10.00	10.49
New England 4-6-10	3.28	3.68	7.00	7.42	6.00	6.00	10.00	10.00
New England 4-8-4	3.28	3.29	9.00	9.71	8.00	8.06	4.00	4.00
New England 5-8-7	4.10	4.10	9.00	9.90	8.00	**7.56**	7.00	**6.58**
New England Corn Phosphate 2-8-2	1.64	1.73	9.00	9.80	8.00	8.66	2.00	2.37
New England Potato Phosphate 4-8-7	3.29	3.34	9.00	10.17	8.00	9.08	7.00	7.19
New England Superphosphate 3-8-4	2.46	2.62	9.00	9.23	8.00	8.00	4.00	4.19
PACIFIC MANURE AND FERTILIZER CO. San Francisco, Cal.								
Groz-It Brand Pulverized Sheep Manure	1.50	1.58	1.25	1.36	0.75	0.90	3.00	**2.20**
PREMIER POULTRY MANURE CO. Chicago, Ill.								
Premier Brand Pulverized Poultry Manure	4.93	5.51	2.75	3.84	2.50	3.30	1.30	1.96
Premier Brand Pulverized Sheep Manure	2.46	3.25	1.50	1.94	....	1.54	2.00	2.36
PULVERIZED MANURE CO. Chicago, Ill.								
Wizard Brand Sheep Manure	2.00	2.23	....	1.94	1.25	1.42	2.00	2.51

	NITROGEN		PHOSPHORIC ACID				POTASH	
			Total		Available			
	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found
ROGERS AND HUBBARD CO. Portland, Conn.								
Corn and Grain Fertilizer	0.82	0.89	11.00	13.89	10.00	12.21	3.00	3.01
Fertilizer for Seeding Down	2.46	2.74	12.00	12.29	5.00	5.74	6.00	6.39
High Potash Fertilizer	2.46	2.73	9.00	11.25	8.00	8.09	10.00	10.19
Oats and Top Dressing	8.22	**7.57**	8.00	9.26	3.00	3.30	8.00	8.00
Potato Fertilizer	1.64	1.78	11.00	13.15	10.00	9.91	4.00	4.14
Soluble Potato Manure	4.93	5.40	10.00	10.80	**8.00**	**7.42**	5.00	5.58

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